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# Rhodora

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## NEW SPECIES OF FERNS FROM CENTRAL AND SOUTH AMERICA

ROLLA TRYON

The following five new species have been recognized among specimens received for identification and during studies on the ferns of Peru.<sup>1</sup>

### *Hemitelia conformis*, spec. nov.

*Cnemidaria*; species *H. petiolatae* et *H. Woronovii* affinis; caulis ad 8 m. altus petiolus basaliter spinosus lamina bipinnata pinnae imparipinnatae pinnulae petiolatae articulatae crenatae vel pinnatilobatae pinnula terminalis articulata productione laterali infra articulum venae plerumque liberae areolis costalis infrequentibus indusium inferius squamoideum.

TYPUS: Piñas Bay, Prov. Darién, Panama, June 26, 1957, W. L. Stearn & K. L. Chambers 188 (GH); isotypi: (us, y).

*Hemitelia conformis* is evidently closely related to both *H. petiolata* Hook. and *H. Woronovii* Maxon & Morton. It differs from them in its imparipinnate pinnae, each having a conform, stalked and articulate terminal pinnule and in the few costal areolae of the pinnules. The latter two species have the apex of the pinna formed of several gradually reduced and confluent segments and lobes, and the veins of the pinnules regularly join to form costal areolae. All three species are arborescent but *H. conformis* is evidently the tallest of them.

FIG. 1

<sup>1</sup> The drawings have been made by Mr. Johannes von Gumpenberg and the photographs by Mr. Richard van Frank.

It is also related to *H. dissimilis* Morton from which it differs, among other characters, in the articulate terminal pinnules, partially areolate venation, non-alate pinna-rachis and arborescent habit. *H. dissimilis* has non-articulate terminal pinnules, is wholly free-veined, the pinna-rachis is

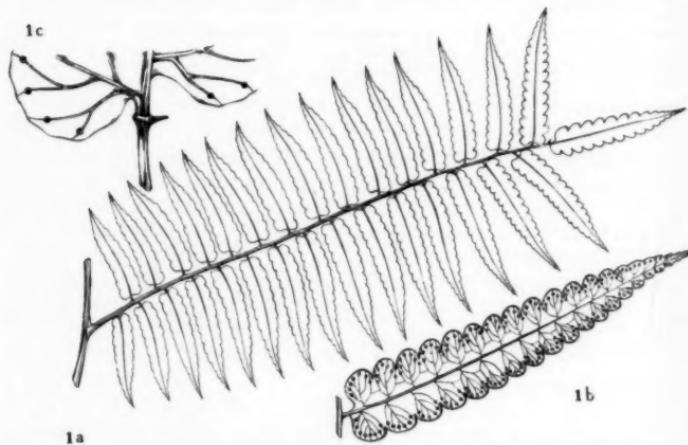


FIG. 1. *Hemitelia conformis* Tryon. 1a, pinna,  $\times \frac{1}{4}$ ; 1b, pinnule,  $\times \frac{2}{3}$ ; 1c, base of terminal pinnule,  $\times \frac{2}{3}$ . All from the holotype.

strongly alate, especially apically, and the stem is some 15 cm. tall.

The unusual nature of the terminal pinnule, being borne on an articulate stalk which has a lateral projection just below the joint, strongly suggests that it was a lateral pinnule that has been displaced with the abortion of the original apical portion of the pinna.

*Alsophila scopulina*, spec. nov.

FIG. 2

Caulis juvenis erectus senior decumbens ad 30 cm. longus circa 3 cm. crassus paleaceus paleis angusto-linearibus pallide fuscis folia ad 7-45 cm. longa 3.5-14 cm. lata passim pubescentia petiolus 1/4-1/3 laminae longitudinis ad basem paleaceus paleis angusto-linearibus integris vel rare denticulatis lamina oblongo-lanceolata acuminata herbacea pinnato-pinnatifida vel bipinnato-pinnatifida pinnae breviter petiolulatae vel sessiles venae liberae sori exindusiati paraphysati receptaculo leviter allevato 8-12 sporangiis plerumque brev-

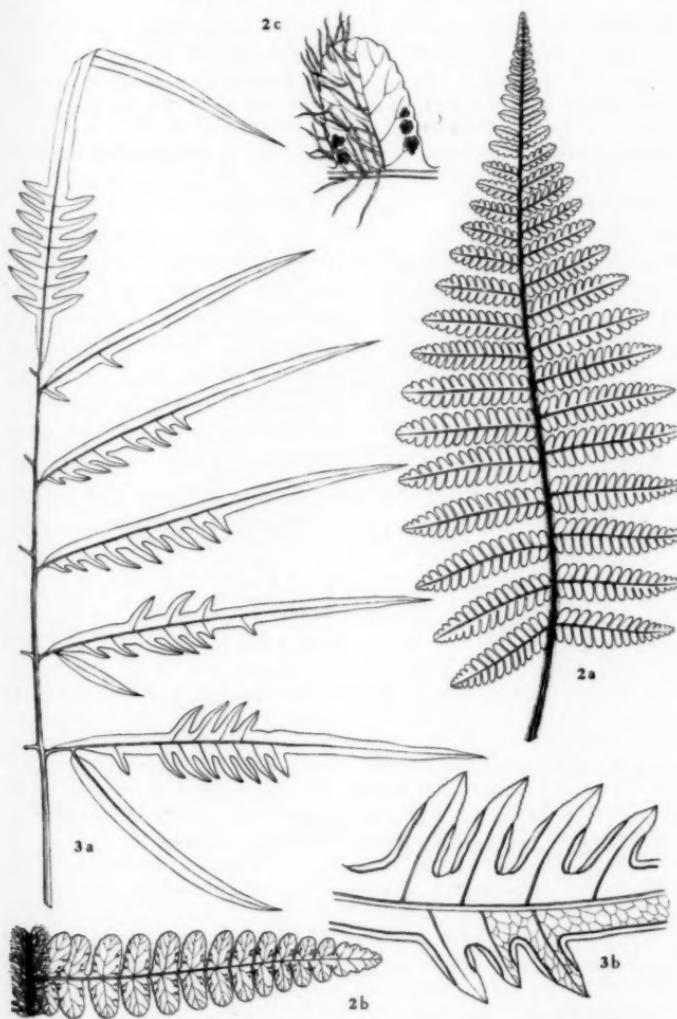


FIG. 2. *Alsophila scopulina* Tryon. 2a, lamina, X 1/2; 2b, pinna, X 1; 2c, ultimate segment, X 8. All from Schultes and Cabrera 14741; only a portion of the pubescence has been shown in each drawing. FIG. 3. *Pteris petiolata* Tryon. 3a, fertile lamina, X 1/4; 3b, portion of a fertile pinna, X 1. Both from the holotype.

iter pedicellata capsula ad 0.25-0.3 mm. longa asymmetricali subglobosa sporae flavae tetrahedro-globosae verrucosae.

**TYPUS:** Río Kananarí (affluent of Río Apaporis), in clumps on sandstone cliff, summit of Cerro Isibukuri, Vaupés, Colombia, June 8, 1951, *R. E. Schultes & I. Cabrera* 13411 (GH); isotypus: (B, BM, NY, U, US). Paratypus: (from the same locality) *Schultes & Cabrera* 13368 (US), 14740 (GH), 14741 (GH).

This species is very closely related to the next, *A. lechria*. The principal difference is that *A. scopulina* has all of the scales at the base of the petiole narrowly linear (the broader ones 8 cells wide) and entire or rarely sparingly dentate while *A. lechria* has some broad scales at the base of the petiole, in addition to the narrow ones. The broad scales are lanceolate-attenuate and about 20 cells wide, and these as well as the narrow ones are freely dentate or ciliate. Also the petiole is relatively short in *A. scopulina*, being one fourth to one third as long as the lamina, while in *A. lechria* it is longer, about one half as long as the lamina. The spores are of a different color in the two species but this may not be a specific character.

**Alsophila lechria**, spec. nov.

PLATE 1251

Species *A. scopulinae* valde affinis, differt petiolo ca. 1/2 laminae longitudinis paleis ciliatis vel denticulatis angusto-linearibus et lanceolatis attenuatis sporis albis. — Caulis decumbens ad 40 cm. longus circa 3 cm. crassus paleaceus paleis angusto-linearibus pallide fuscis folia ad 25-70 cm. longa 8-25 cm. lata passim pubescens lamina lanceolata chartacea pinnato-pinnatifida vel bipinnato-pinnatifida pinnae breviter petiolulatae venae liberae sori exindusiat paraphysati receptaculo modice allevato 8-14 sporangiis sporangia plerisque breviter pedicellata capsula ad 0.25-0.3 mm. longa asymmetricali lachriformi-globosa sporae albae tetrahedro-globosae verrucosae.

**TYPUS:** Rocky ledge, Mesa do los Santos, Dept. Santander, Colombia, 1500 m., Dec. 11-15, 1926, *E. P. Killip & A. C. Smith* 15202 (GH); isotypus: (US).

The epithet is from *LECHRIA*, oblique, in reference to the decumbent stem.

**REMARKS ON ALSOPHILA.** — These two new species of *Alsophila* are of considerable interest because they approach the genus *Lophosoria* in several characters. As I first studied the material of *A. scopulina* I was inclined to consider it to

represent a new genus intermediate between *Alsophila* and *Lophosoria*. However, after additional study, I believe they are better placed in *Alsophila*.

*Lophosoria* is characterized by a 6-rowed sporangial stalk

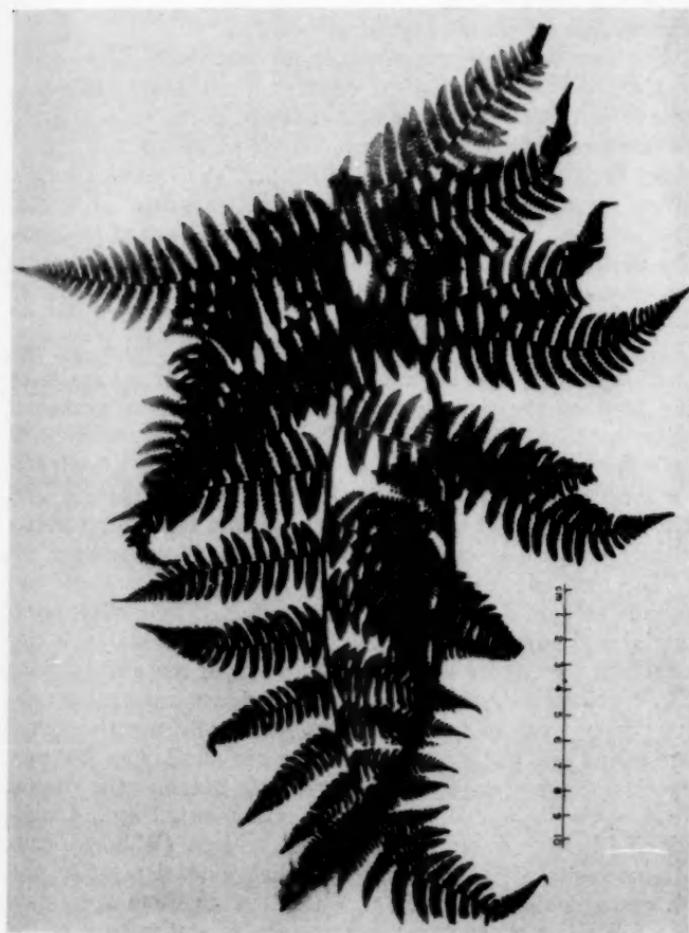


PLATE 1251 *Alsophila lechria* Tryon, from the holotype.

and a pubescent stem that is erect when young but becomes decumbent or prostrate with age, a pubescent leaf, a sorus with about 7-10 subsessile sporangia that are produced at the same time, these are borne on an essentially flat receptacle and have a large (0.4-0.5 mm. long) capsule that is somewhat asymmetrically subglobose.

The two new species resemble, or approach, *Lophosoria* in their decumbent mature stem, in their sorus with few (8-14) short-stalked sporangia that are borne on a slightly elevated receptacle and have a rather large (0.25-0.3 mm. long) capsule of rather similar shape. The sporangia of a given sorus evidently mature, and perhaps are produced, at one time. The presence of scales at the base of the petiole that are only two cells wide mixed with trichomes and broader scales is suggestive of a transitional type of indument.

*Alsophila* has a 4-rowed sporangial stalk and a paleate stem, and most species have an erect stem, broad scales at the base of the petiole (scales and trichomes may be on other parts of the leaf as well), a sorus with about 25-30 definitely stalked sporangia that are produced in a basipetal sequence, these are borne on an elevated receptacle and have a small (0.15-0.2 mm. long) capsule that is asymmetrically lachriform and somewhat laterally compressed.

The new species have the 4-rowed sporangial stalk and paleate stem and petiole base of *Alsophila*. Their other sporangial and soral characters and their narrow scales do not separate them from *Alsophila*. A survey of some 100 species of American *Alsophila* has shown that several of them depart from some of the characters previously mentioned for the genus and in these approach, or are similar to, the new species. Such species are: *A. trichiata* Maxon (the closest to *A. scopulina* and *A. lechria*), *A. microdonta* Desv., *A. stipularis* Christ, *A. ursina* Maxon, *A. villosa* (Willd.) Desv., *A. lasiosora* Mett. ex Kuhn, *A. dichromatolepis* Fée and *A. corcovadensis* (Raddi) C. Chr. Among them are found the following characters: narrow scales at the base of the petiole, a sorus with 12-16 short-stalked sporangia that are

borne on a very moderately elevated receptacle and apparently mature at one time and have a lachriform-globose capsule that is 0.3 mm. long.

Although the new species represent one extreme in the genus *Alsophila*, it is evident that they are a part of its total range of variation.

It is of interest to note that, with the exception of *A. ursina*, other small species such as *A. Gleasonii* Maxon, *A. Haughtii* Maxon, *A. Kuhnii* (Hieron.) C. Chr., *A. phalaenolepis* C. Chr. and *A. phegopteroides* Hook. show no close relationship to the two new ones.

**Cheilanthes fractifera, spec. nov.**

PLATE 1252

Species *Ch. Brandegei* valde affinis, differt paleis basalibus petiolorum latis albidis denticulatis lamina pilis multis 2-5 cellulorum.—Rhizoma breve paleis opacis fuscis concoloribus petioli propinquai fracteris supra basis post maturi lamina bipinnato-pinnatifida pinnis 5-6 jugis basalibus magnis rhachis sulcata supra basem alata segmenta lata herbacea.

TYPUS: 45 kms. from Nasca on road to Puquio, Dept. Ayacucho, Peru, 2200 m. Feb. 14, 1958, D. S. Correll & E. E. Smith P169 (GH); isotypus: (LL). Paratypus: rocky hillside, km. 68, Carretera Central (Rimac Valley), Dist. Surco, Prov. Huarochiri, Dept. Lima, Peru, ca. 6000 ft., Jan. 1, 1954, S. G. E. Saunders 219 (GH ex BM).

This new species differs from *Cheilanthes Brandegei* D. C. Eaton in having the lamina rather abundantly invested with 2 to 5-celled trichomes (mostly variously bent) and in having the several scales at the base of the petiole whitish, broad and with denticulate margins. *Cheilanthes Brandegei* has the lamina sparingly invested with 1-celled, straight and pointed trichomes and the scales at the base of the petiole are few, rather narrow, brown, and with entire margins.

The two species are very closely related and are similar in the following characters: rhizome scales concolorous and dull, petioles that fracture with age toward their base (one to several times), rather deltoid lamina with the basal pinnae large, rachis sulcate on the upper side and alate above the base, few nearly opposite pinnae with thin and broad ultimate segments and flattened trichomes, indusium of similar form and modification.

Such pairs of related species as *Notholaena incana* Pr. (primarily Mexico) and *Notholaena nivea* (Poir.) Desv. (primarily Andean South America) and *Cheilanthes pyra-*



PLATE 1252 *Cheilanthes fractifera* Tryon, from the holotype.

*midalis* Fée (primarily Mexico) and *Cheilanthes marginata* HBK. (Andean South America) have broader distributions

than *Cheilanthes Brandegei* (Baja California) and *Cheilanthes fractifera* (Peru) but of a similar pattern.

Two species of South Africa seem to be most closely related to these two American *Cheilanthes*. *Cheilanthes deltoidea* Kze. especially in its freely fracturing petioles and *Cheilanthes capensis* (Thunb.) Sw. in its broad thin segments and often similar lamina. The distribution of *Pellaea andromedifolia* (Kaulf.) Féé (California), *Pellaea myrtillifolia* Mett. ex Kuhn (Chile) and *Pellaea rufa* A. F. Tryon (South Africa) would be parallel to that of this *Cheilanthes* alliance.

Among other Cheilanthoid ferns the fracturing petiole is also found in *Pellaea Breweri* D. C. Eaton, *Cheilanthes rigida* (Sw.) Féé and *Cheilanthes pteridiooides* (Reich.) C. Chr. This character may or may not be one that indicates phyletic relationship. It seems to be especially developed in species with leaves that have relatively thin and broad segments and that grow in relatively dry — but seasonally moist — habitats. The leaves can probably resist desiccation only slightly and once dry can not remain viable. The effective cutting off of the leaves by the breaking of the petiole may aid in the conservation of moisture in the rhizome. Most xeric ferns, on the other hand, have coriaceous leaves that not only can resist desiccation to a certain degree but evidently can also remain viable while dry for at least a short time. These can remain functional during a growing season broken by short dry periods. The former species actively grow in the xeric habitats only when they are seasonally mesic; the latter can actively grow in such habitats for a longer period of time.

*Pteris petiolulata*, spec. nov.

Species *Pteris Fraseri* affinis, differt pinnis petiolulatis vel versus apicem laminarum sessilibus segmentis areolis 3-5 stichorum maximis ca. 4-6 mm. longis. — Rhizoma modice parva erecta folia circa 0.75-1.5 m. longa pinnae pubescentes praesertim in costa et marginibus plerumque integrae vel inequaliter lobatae vel pinnatifidae vel cum pinula integra marginibus sterilibus integris vel versus apicem segmentorum serrulatis costa supra sine aristis venis areolati prominentes.

FIG. 3

TYPUS: La Merced, Dept. Junín, Peru, ca. 4000 ft., Aug. 27-Sept. 1, 1923, J. F. Macbride 5714 (US); isotypus: (F).

*Pteris petiolulata* grows in forests at low to moderate elevations, from Venezuela to Peru. In addition to the type-collection, I have seen the following specimens: VENEZUELA: Cerro Duida, Steyermark 57982 (US); COLOMBIA: La Cumbre, Dept. El Valle, Killip 5844 (GH, US), 6 km. west of Medina, Dept. Cundinamarca, Grant 10421 (US); PERU: Río Pachiri, Dept. Cuzco, Bües 1767 (US), San Ramón, Dept. Junín, Killip & Smith 24696 (GH, US).

The irregular development and spacing of the lobes and segments on the pinnae is suggestive of a hybrid origin but there seems to be no other evidence for it. The sporangia, the spores and their number in a sporangium appear quite normal. Although a hybrid of *Pteris grandifolia* L. and *Pteris vestita* Baker would probably be similar to *Pteris petiolulata*, *Pteris vestita* is not known outside of Peru.

This species has been confused with *Pteris Fraseri* Mett. ex Kuhn of Ecuador from which it differs principally in its stalked or sessile pinnae, its small areoles (the largest 4-6 mm. long) and the number of rows of areoles between the costa and margin, usually three rows in narrow segments and five rows in broad ones. *Pteris Fraseri* has only the basal pinnae stalked, the lamina above them is pinnatifid, the largest areoles are 10-15 mm. long and there are usually two rows of them in narrow segments and three (rarely four) in the broadest ones.

*Pteris denticulata* Sw. of the West Indies to Brazil, Argentina and Bolivia, is related to both *Pteris petiolulata* and *Pteris Fraseri*; it differs from these in having the sterile margins serrate-spinescent, rather than entire to serrulate.

— GRAY HERBARIUM OF HARVARD UNIVERSITY.

## THE AMERICAN CRUCIFERAEE OF SESSÉ AND MOCINO

REED C. ROLLINS

The publication of two separate books<sup>1</sup> on the flora of Mexico a century after they were largely prepared by Sessé and Mociño introduced many plant names into the literature that have never been satisfactorily interpreted. Some of these were new at the time of publication. Others are misapplications, usually arising from misidentifications. Very often the misapplication is completely outside of the proper genus, leading to a great deal of confusion. To take an example from the Cruciferae, the name *Arabis pinnata* has been in the records since its publication in 1889 but there has been no understanding of its application. The specimen labeled *Arabis pinnata* in the Sessé and Mociño collection belongs to the wholly unsuspected genus *Rorippa*. As suggested by Sprague<sup>2</sup>, for the interpretation of Sessé and Mociño's descriptions it is crucial to study the original specimens from the Madrid Botanical Garden and the drawings copied under the direction of A. P. DeCandolle from the originals of Sessé and Mociño. The latter were apparently lost sometime after having been copied.

In the present study, I have been fortunate to have available for careful examination the specimens of Cruciferae collected in "Nueva España" by Sessé, Mociño, Castillo and Moldano, now on loan from the Madrid Botanical Garden to the Chicago Natural History Museum. Furthermore, one of the copy-sets of tracings of "Calques des Dessins de la Flore du Mexique, de Mociño et Sessé" is in the Gray

<sup>1</sup> Sessé, Martino et Josepho Mariano Mociño. *Plantae Novae Hispaniae*. 1-184. 1887-1890. Originally published in *La Naturaleza*, Volume 1, series 2. For dates of publication see Lloydia 5: 95-96. 1942. Edition 2 with different pagination published in 1893.

Sessé, Martinus et Josephus Mariannus Mociño. *Flora Mexicana*. 1-263. 1891-1897. Pages 1-125 published before edition 2 in *La Naturaleza*, Volume 2, series 2. Edition 2 with different pagination published in book form in 1894.

<sup>2</sup> Sprague, T. A. Sessé and Mociño's *Plantae Novae Hispaniae* and *Flora Mexicana*. Kew Byll. 1926: 417-425. 1926.

Herbarium library and has been helpful in the interpretation of *Nasturtium mexicanum*.

On the whole, the specimens of Sessé and Mociño are adequate for identification and some of them were beautifully prepared. Several sheets have two different species mounted on them. These mixtures might have taken place during the handling of the specimens subsequent to their original collection but such mixtures in the Cruciferae occur quite frequently at the time the material is gathered even with the best collectors. At the present it is not possible to guess as to how the mixtures might have come about.

In the notes that follow, the genera and species represented in the collection are given alphabetically, together with pertinent comments. This is followed by a listing of the names that appear in the various editions of Sessé and Mociño's *Plantae Novae Hispaniae* and their *Flora Mexicana*, together with the modern name to which each should be referred whenever this could be determined.

**Arabis** — probably *A. Stellari* DC. The sheet numbered 3341 has an old label marked "15-2 Brassica violacea". The specimens, though in flower and young fruit only, are certainly *Arabis*, but they do not belong to any known Mexican species. They do compare favorably with material of *A. Stellari* from eastern Asia and I believe they represent that species.

**Brassica campestris** L., Sp. Pl. 666. 1753. Sheet number 3344 is a mixture, having one plant of *B. campestris* and one plant of *Romanschulzia arabiformis* on it.

**Brassica nigra** (L.) Koch in Roehl. Deutschl. Fl. 3: 713. 1833, based on *Sinapis nigra* L., Sp. Pl. 668. 1753. Sheet No. 3347 has an old label with some descriptive matter pertaining to the siliques and foliage. In addition, this label bears the misspelled generic name "*Synapis*" plus "15-2" and an undecipherable word associated with *Synapis*.

**Cakile lanceolata** (Willd.) O. E. Schulz in Urban, Symb. Antill. 3: 504. 1903, based on *Raphanus lanceolatus* Willd., Sp. Pl. 3: 562. 1800. There are two sheets of number 3348

with old labels giving "15-2 Raphanus Raphanistrum" and each sheet has several pieces of plant on it. The characters of *Cakile lanceolata* are well shown by the material and it is assumed that the specimens were gathered somewhere along the coast of Mexico or Central America.

**Cochlearia** — probably *C. officinalis* L. Sheet number 3358 bears old labels marked "15-2 Subularia aquatica". In the envelope on this sheet are two plants of *Cochlearia* and one plant belonging to the Caryophyllaceae which I have not attempted to identify. Certainly, the *Cochlearia* did not come from Mexico or the Central American area.

**Descurainia streptocarpa** (Fourn.) O. E. Schulz, Pflanzn. IV. 105: 317. 1924, based on *Sisymbrium streptocarpum* Fourn., Recherch. Crucif. 58. 1865. The one sheet numbered 3362, having parts of three plants present, is referred to *Descurainia streptocarpa* without certainty because there are only young siliques available for examination. However, all of the characteristics shown by the specimens do compare favorably with authentic material of *D. streptocarpa*.

**Draba jorullensis** H. B. K., Nov. Gen. et Sp. Pl. 5:78. 1821. Excellent specimens of *Draba jorullensis* are present on sheet No. 3346, which has "15-1 Bunias orientalis" on the original label. A second collection, No. 3359, consists of two sheets. The old label gives "15-1 Subularia?" followed by a fairly adequate description of the calyx, corolla and siliques. The two collections are slightly different but both fall within the overall variation of *D. jorullensis* as treated in Hitchcock's monograph<sup>3</sup>.

**Eruca sativa** Gars., Traite Pl. Anim. 2:166. 1767. One plant and part of another of this species are on Sheet No. 3343, together with the top of a plant of *Nasturtium Gambelii* (Wats.) Schulz. The old label reads "15 . . . 2 Brassica Eruca".

<sup>3</sup> Hitchcock, C. Leo. A Revision of the Drabas of Western North America. Univ. Wash. Publ. Biol. 11:95-96. 1941.

**Halimolobos Berlandieri** (Fourn.) O. E. Schulz, Pflanzenr. IV. 105:289. 1924, based on *Sisymbrium Berlandieri* Fourn. Recherch. Crucif. 105. 1865. A sheet bearing No. 3339 and with an old label reading "15-2 Brassica" has a mixture of *H. Berlandieri* and *Pennellia patens* (Schulz) Rollins. Otherwise, *H. Berlandieri* is represented in the collection by No. 3350, which consists of 2 sheets, one of which bears on the original label "15-2 Erysimum". A fourth sheet of *H. Berlandieri* has been assigned No. 3352 and the original label on it reads "15-2 Sisymbrium".

**Halimolobos polyspermus** (Fourn.) O. E. Schulz, Pflanzenr. IV. 105:294. 1924, based on *Sisymbrium polyspermum* Fourn. Recherch. Crucif. 103. 1865. A single sheet belonging to *H. polyspermus* and with the old label reading "15-2 Turritis?" is present in the collection.

**Lepidium sordidum** Gray, Pl. Wright. 1:10. 1852. The collection now numbered 3355 bears "15-1 Lepidium ruderale" on the old label, together with some descriptive material on the flowers and foliage. The two plants present on the sheet are more comparable to other specimens of *L. sordidum* from the region of Mexico City than to those from farther north in Mexico or from Texas.

**Lepidium virginicum** L., Sp. Pl. 645. 1753. Number 3363 with an old label giving the name "Clipeola mexicana N." is referable to *Lepidium virginicum*. This early record, although not conclusive, certainly is evidence in support of the probability that *L. virginicum* is native to Mexico and not merely an introduced weed, as some have contended.

**Lesquerella argyraea** (Gray) Watson, Proc. Am. Acad. 23:254. 1888, based on *Vesicaria argyraea* Gray, Bost. Jour. Nat. Hist. 6: 146. 1850. An unpublished name, "Miagrum occidentale" appears on the original label of the specimen referable to *L. argyraea*. There is no indication as to the place of collection. The number 15-1 is in the original handwriting and the number 3357 has been added.

**Lesquerella argentea** (Schauer) Watson, Proc. Amer. Acad. 23:252. 1888, based on *Vesicaria argentea* Schauer,

*Linnaea* 20:720. 1847. Number 3360 bears the old label "Subularia? cl. 14 N. E." Other than the word *Subularia*, there is no significance in the label information for me. The specimen is in good fruit and is well preserved. The siliques are strongly flattened contrary to the septum and the replum has a lanceolate shape. Actually, this Sessé-Mociño specimen adds another facet of variation to that heretofore recognized in *Lesquerella argentea*. The value of the specimen for study would be considerably enhanced if some locality information for it were available.

**Nasturtium Gambelii** (Wats.) O. E. Schulz, Bot. Jahrb. 66:98. 1933, based on *Cardamine Gambelii* Watson, Proc. Amer. Acad. 11:147. 1876. There is a sheet of *N. Gambelii* marked "15-2 Erysimum" on the old label and assigned the new number 3349. A second sheet, with the new number 3343, is a mixture of *N. Gambelii* and *Eruca sativa*. Although no locality data are given, the specimens almost certainly came from the Valley of Mexico, for they are closely similar to *Pringle 6318* and *Bourgeau 18*, both of which came from the Mexico City area. *N. Gambelii* has a peculiarly restricted distribution in two widely separated areas, southern California and the Valley of Mexico. The type comes from Santa Barbara, California, and is nearly glabrous as are other specimens from there and from Los Angeles. However, material from San Bernardino has leaf-rachises, upper stems and pedicels hirsute with flat trichomes. The pedicels tend to be flattened and the upper surface only is hirsute. The same type of trichomes and the pattern of trichome distribution, as in the San Bernardino material, is found on specimens from Mexico.

*Nasturtium Gambelii* is in many ways similar to *N. microphyllum* [*N. officinale* var. *microphyllum*] and appears to be more properly placed in *Nasturtium* than in *Cardamine*, where most authors have treated it.

**Pennellia patens** (O. E. Schulz) Rollins, comb. nov., based on *Heterothrix patens* O. E. Schulz, Pflanzenr. 4. fam. 105. 296. 1924. The upper part of a single plant of *Pennellia*

*patens* is present on a sheet, No. 3339, which also has on it the upper part of a plant of *Halimolobos Berlandieri* (Fourn.) Schulz.

**Pennellia longifolia** (Benth.) Rollins, comb. nov., based on *Streptanthus longifolius* Bentham, Pl. Hartweg. 10. 1839. Number 3338 with the old label showing "15-2 ic. D"; 2 sheets of No. 3354 with the old label bearing "15-2 Turritis?" and No. 3361 with the old label bearing "15-2 Genus . . . Yc. D." all belong to *Pennellia longifolia*. This species has been variously known under the generic names *Streptanthus*, *Thelypodium*, and *Lamprophragma*. However, there is no doubt about the close affinity of *Pennellia micrantha*, the type species of *Pennellia*, and *P. longifolia*. In early stages of growth and up to and including early flowering, it is difficult to distinguish between *P. micrantha*, *P. longifolia* and *P. patens*. Certainly they should be together in the same genus. They are out of place in both *Streptanthus* and *Thelypodium*. The genus *Pennellia* was founded by Nieuwland to replace the later homonym *Heterothrix* of Rydberg, which in turn was based on *Streptanthus micranthus*. *Pennellia* thus becomes the logical choice to accommodate the two species here considered.

**Romanschulzia arabiformis** (DC.) Rollins, Contrib. Dudley Herb. 3: 221. 1942, based on *Nasturtium arabiforme* DC., Syst. 2:200. 1821. Three numbers belong to *R. arabiformis* as follows: No. 3340 "15-2 Brassica"; No. 3342 "15-2 Brassica? glandulæ in paucis floribus"; and No. 3344 "15-2 Brassica campestris". The latter number is a mixture and does, in fact, have one plant of *Brassica campestris* on the sheet.

**Rorippa mexicana** (Moc. & Sessé). Standl. & Steyermark, Field Mus. Bot. 23:54. 1944, based on *Nasturtium mexicanum* Moc. & Sessé in DC., Reg. Veg. Syst. Nat. 2: 193. 1821. cf. also DC., Calques des Dessins de la Flore du Mexique, de Mociño et Sessé, pl. 18. 1874.

This original label of the holotype bears the number 15-2 and the name *Sisymbrium amphibium*. There is no other information except the later assigned number 3351. The



FIG. 1. *Rorippa pinnata* (Sessé & Mociño) Rollins. A — habit sketch  $\times \frac{1}{2}$ ; B — flower  $\times 10$ ; C — replum  $\times 3$ ; E — seeds  $\times 10$ . Drawings from Pringle 3552 by C. S. Tsao.

holotype compares favorably with a tracing of the original illustration cited by DeCandolle at the time of the first publication of *Nasturtium mexicanum*, where "Moc. Sess. & Cerv." are cited as the authors of these Mexican Icones. In later publications, DeCandolle referred only to "Moc. & Sesse" as the authors of the same unpublished work. I have followed the more recent practice, which is to attribute *Nasturtium mexicanum* to Mociño and Sessé.

*Rorippa mexicana* is nearest related to *R. Walteri* of southeastern United States. Its geographical range appears to be from Chihuahua southward in the plateau area of Mexico to Costa Rica. However, a thorough study of *Rorippa* in Mexico needs to be made, not only to accurately determine identities but also to properly ascertain the range of variation within each species.

Sessé and Mociño did not use the name *Nasturtium mexicanum* in their own publications on the flora of Mexico.

***Rorippa pinnata*** (Sessé & Mociño) Rollins, comb. nov., based on *Arabis pinnata* Sessé & Moc. La Naturaleza, ser. 2, I; appendix p. 104. 1889. The name *Arabis pinnata* has been very much of a puzzle up to the present because the original description associated with it was much too terse to offer any good clues as to what genus the plants described were certainly referable. I had always assumed that at least a plant with linear siliques was the basis for the name. However, with the Sessé and Mociño holotype in hand, the name can at last be settled. The original label data corresponds very closely with the published habitat notes and there is no question but that the specimen under study is the type. The original label reads, "15-2 *Arabis pinnata* N. Habitat ad margines rivulorum Guaunahuacae". The newly assigned number is 3345.

Most of the specimens of *Rorippa pinnata* in the Gray Herbarium have been undetermined or referred to *R. mexicana*. The following Mexican collections belong to *R. pinnata*: Valley of Mexico. Federal Dist., 6 Nov., 1902, Pringle 11328; same locality, 27 Aug., 1890, Pringle 3552; same locality, 3 June, 1896, Pringle 6302; Canal de Santa Anita,

near Mexico, 25 April [1863-66] Bourgeau 16; Crucero-Agua Blanca, Temascaltepec, 9 Nov., 1935, G. B. Hinton 8329. Fig. 1.

Following are the names of Cruciferae found in Plantae Novae Hispaniae and Flora Mexicana:

*Arabis pinnata* (Pl. Nov. Hisp. 104; ed. 2, 97) = *Rorippa pinnata* (Sessé and Mociño) Rollins.

*Brassica campestris* (Fl. Mex. 168; ed. 2, 154) = *B. campestris* L. mixed with *Romanschulzia arabiformis* (D C.) Rollins.

*Brassica chinensis* (Pl. Nov. Hisp. 105; ed. 2, 98), specimen unknown.

*Brassica eruca* (Pl. Nov. Hisp. 105; ed. 2, 98) = *Eruca sativa* Gars. mixed with *Nasturtium Gambelii* (Wats.) Schulz.

*Brassica napus* (Pl. Nov. Hisp. 104; ed. 2, 97), specimen unknown.

*Brassica oleracea* (Pl. Nov. Hisp. 104; ed. 2, 98), specimen unknown.

See above for the identities of three sheets which bear the generic name *Brassica* on old labels.

*Bunias orientalis* (Fl. Mex. 168; ed. 2, 153) = *Draba jorullensis* H. B. K.

*Cheiranthus cheiri* (Pl. Nov. Hisp. 104; ed. 2, 97), specimen unknown.

*Cheiranthus incanus* (Pl. Nov. Hisp. 104; ed. 2, 97), specimen unknown.

*Clypeola mexicana* (Pl. Nov. Hisp. 104; ed. 2, Clypeola 97) = *Lepidium virginicum* L.

*Coclearia coronopus* (Pl. Nov. Hisp. 104; ed. 2, Cochlearia 97), specimen unknown.

*Hesperis matronalis* (Pl. Nov. Hisp. 104; ed. 2, 97), specimen unknown.

*Lepidium iberis* (Fl. Mex. 168; ed. 2, 153), specimen unknown.

*Lepidium latifolium* (Pl. Nov. Hisp. 104; ed. 2, 97), specimen unknown.

*Lepidium ruderale* (Fl. Mex. 168; ed. 2, 153) = *Lepidium sordidum* Gray.

*Raphanus raphanistrum* (Pl. Nov. Hisp. 105; ed. 2, 98) = *Cakile lanceolata* (Willd.) Schulz.

*Raphanus sativus* (Pl. Nov. Hisp. 105; ed. 2, 98), specimen unknown.

*Sinapis arvensis* (Pl. Nov. Hisp. 105; ed. 2, 98), specimen unknown.

A sheet with the name "Synapis" is *Brassica nigra* but it does not bear any marks or information that would fix it as the basis for the report of *S. arvensis*.

*Sisymbrium indicum* (Pl. Nov. Hisp. 105; ed. 2, 98), specimen unknown.

*Sisymbrium sophia* (Pl. Nov. Hisp. 105; ed. 2, 98), specimen unknown.

*Turritis hirsuta* (Fl. Mex. 168; ed. 2, 154), specimen unknown. There are two sheets in the collection marked "Turritis?", but these could scarcely be the basis for the report of *T. hirsuta*. One is *Halmolobos polyspermus* and the other is *Pennellia longifolia*. — GRAY HERBARIUM OF HARVARD UNIVERSITY.

PLANT LISTS ARE WHERE YOU FIND THEM:  
A LIST OF LOCAL FLORAS OF MASSACHUSETTS  
PUBLISHED SINCE 1898.

STUART K. HARRIS

In an article on "Wild Flower Identification" which appeared in Massachusetts Audubon for March-April 1958 the statement was made, "Local lists are rare." This raised my hackles, for the New England area, and particularly Massachusetts, is probably better provided with local lists of plants than any region of comparable size in the United States. I know of three<sup>1</sup> important bibliographies of local floras. NATHANIEL LORD BRITTON, 1890: a list of state and local floras of the United States and British America. Annals N. Y. Acad. Sci. 5: 237-299 covers the period up to May 1890 and contains 45 items for Massachusetts. MARY A. DAY, 1899, 1900: the local floras of New England. Rhodora 1: 111-120, 138-142, 174-178, 194-196, 208-211 and 2: 254-257 includes items up to 1 January 1899 and contains 95 titles for Massachusetts. FRANK E. EGLER, 1950: regional vegetation literature III. Massachusetts. Phytologia 3: 193-237 is the most recent but has a somewhat broader coverage, including vegetational as well as floristic papers.

In the present list I have attempted to include papers which have appeared since the publication of Miss Day's list plus a few additions and corrections to that list. I am sure that my series is not complete but I think that it includes most of the major floras as well as a few very minor ones. Most of the items have been seen by me but a few titles are taken from a variety of sources. I have also included a number of short notes adding species to published floras. It is difficult to know exactly where to draw the line

<sup>1</sup> In addition to the standard list of floras by S. F. Blake and Alice C. Atwood, Geographical Guide to Floras of the World, U. S. Dept. of Agric. Misc. Publ. 401. 336 pp. 1942.

and a few items are included for whimsical rather than scientific reasons. The list begins with a general section which contains papers dealing with more than one county; county sections follow.

While many of the items have appeared in books or in well-known journals, others turn up in the strangest places; hence the title of the paper. Some have appeared spasmodically in local newspapers, others in annual reports of town departments or local societies and many are tucked away in town histories. The authors grade all the way from trained botanists of world-wide reputation to the rankest of amateurs, in one case a sophomore in high school. While the value of the lists varies greatly some useful information can be gleaned from most of them.

#### GENERAL

- BLANKINSHIP, J. W. 1903. The plant formations of eastern Massachusetts. *Rhodora* 5: 124-127.
- BROWN, ABBIE FARWELL 1900. Notable trees about Boston. *New Eng. Mag.* 22: 503-523.
- CLARK, DANIEL ALLEN 1907. Forest trees of Massachusetts. 67 pp. Wright & Potter, Boston. Other editions through 1916.
- COOK, H. O. 1931. Original forests of Cape Cod. *Jour. Forestry* 29: 422, 423.
- FERNALD, MERRITT LYNDON 1910. Notes from the Phaenogamic Herbarium of the New England Botanical Club,—I. Some local plants of eastern and central Massachusetts. *Rhodora* 12: 185-192.
1924. Key to the families of spring-flowering plants of eastern Massachusetts. 12 pp. Harvard University, Cambridge.
- GOODALE, ALFRED SHEPARD 1935. A check list of the Gymnospermae occurring in the Connecticut River Watershed in Massachusetts. 4 pp.
- HARPER, ROLAND MCMILLAN 1900. Further additions to the flora of the Amherst region. *Rhodora* 2: 68-70.
1900. Notes on the distribution of some of the rarer plants of central Massachusetts. *Rhodora* 2: 119-123.
1905. Coastal Plain plants in New England. *Rhodora* 7: 69-80.
1906. Further remarks on the Coastal Plain plants of New England, their history and distribution. *Rhodora* 8: 27-30.
- HOLICK, ARTHUR 1902. Geological and botanical notes: Cape Cod and Chappaquidick Island, Massachusetts. *Bull. N. Y. Bot. Gard.* 2: 381-407.

- ILLICK, JOSEPH S. 1927. Common trees of Massachusetts. 110 pp. American Tree Association, Washington.
- KNOWLTON, CLARENCE HINCKLEY The earliest spring flowers. 2 pp. South Shore Nature Club Leaflet #3.
1907. Newly observed stations for Massachusetts plants. *Rhodora* 9: 11-15.
1929. Index to the Flora of the Boston District. *Rhodora* 31: 41-43.
1930. The goldenrods of the Massachusetts South Shore. South Shore Nature Club.
1931. The asters of the Massachusetts South Shore. South Shore Nature Club.
1933. Trees of the Massachusetts South Shore. South Shore Nature Club.
1944. Shrubs and vines of the Massachusetts South Shore. 20 pp. South Shore Nature Club.
1949. Plant societies of south-eastern Massachusetts. 10 pp. South Shore Nature Club.
- LOCKE, ELSIE 1902. Flower folk in the Boston Reservations. *New Eng. Mag.* 26: 259-267.
- MANNING, WAYNE E. 1937. New records for the Connecticut Valley in Massachusetts. *Rhodora* 39: 186-188.
- MAYHEW, INEZ P. 1920. Winter flowers in Massachusetts. *Amer. Bot.* 26: 140, 141.
- MOLDENKE, HAROLD N. 1945. A contribution to our knowledge of the wild and cultivated flora of Massachusetts,— I. *Torreya* 45: 41-52.
- NEW ENGLAND BOTANICAL CLUB 1907-1924. Flora of the Boston District. *Rhodora* 9-26. This work which appeared in forty-nine parts scattered over eighteen years is by far the most important flora in the list. The Boston District includes Essex County; Suffolk County; Norfolk County; all of Middlesex County except Shirley, Pepperell, Townsend and Ashby; Southborough in Worcester County; Mansfield and Easton in Bristol County and Plymouth County south through West Bridgewater, East Bridgewater, Hanson, Pembroke and Duxbury.
1910. Plants of eastern Massachusetts flowering in April 1910. *Rhodora* 12: 127-129.
- 1928-1947. Reports on the flora of Massachusetts. *Rhodora* 30-49. This started out to be a state flora but unfortunately only four parts were issued which cover the Pteridophyta through the Gramineae. There is little prospect that additional parts will appear in the near future.
- SIMMONS, JAMES RAYMOND 1919. Historic trees of Massachusetts. 139 pp. Marshall Jones, Boston.

- STONE, GEORGE E. 1899. Past and present floral conditions in central Massachusetts. *Rhodora* 1: 143-148.  
1907. Massachusetts weeds. 8 pp. Mass. State Board Agr. Nature Leaflet #20.  
1913. A list of plants growing without cultivation in Franklin, Hampshire and Hampden Counties, Massachusetts. 72 pp. Carpenter & Morehouse, Amherst.  
WAUGH, FRANK A. AND CHARLES H. THOMPSON 1930. Hardy woody plants. *Mass. Agr. Exp. Sta. Bull.* #267: 146-182.

#### BARNSTABLE COUNTY

- BARTLETT, HARLEY HARRIS 1908. The submarine Chamaecyparis bog at Woods Hole, Massachusetts. *Rhodora* 11: 221-235.  
CHENEY, CLARA IMOGENE 1902. Rare plants in Centerville, Massachusetts. *Rhodora* 4: 245, 246.  
1904. Plants from Cape Cod. 19 pp. Boston.  
CLARK, HUBERT LYMAN 1901. Notes on the flora of Woods Hole, Massachusetts. *Rhodora* 3: 87-89.  
COLLINS, FRANK SHIPLEY 1909. Notes on the flora of lower Cape Cod. *Rhodora* 11: 125-133.  
1910. Flora of lower Cape Cod; supplementary note. *Rhodora* 12: 8-10.  
1911. Flora of lower Cape Cod; third note. *Rhodora* 13: 17-22.  
1915. November flowers. *Rhodora* 17: 33-38.  
DEANE, WALTER 1889. A few Cape Cod plants. *Bot. Gaz.* 14: 45-47.  
FOGG, JOHN MILTON, JR. 1930. A few noteworthy plants from Falmouth, Massachusetts. *Rhodora* 32: 103-111.  
HARPER, ROLAND MCMILLAN 1921. Cape Cod vegetation. *Torreya* 21: 91-98.  
KNOWLTON, CLARENCE HINCKLEY 1914. The original flora of the Old Colony. *Rhodora* 16: 113-116.  
SINNOTT, EDMUND W. 1912. The pond flora of Cape Cod. *Rhodora* 14: 25-34.

#### BERKSHIRE COUNTY

- ANDREWS, A. LEROY 1900. Orchids of Mt. Graylock, Massachusetts. *Rhodora* 2: 179, 180.  
ADAMS, JOHN COLEMAN 1901. Nature studies in Berkshire. 225 pp. Putnam, N. Y.  
BAILEY, S. WALDO AND HERBERT J. ARNOLD 1957. Bartholomew's Cobble, Sheffield, Massachusetts. 32 pp. Trustees of Reservations. The plant list is based on the work of Charles Alfred Weatherby.  
HOFFMAN, RALPH 1904. Notes on the flora of Berkshire County, Massachusetts. *Rhodora* 6: 202-206.  
1922. Flora of Berkshire County, Massachusetts. *Proc. Boston Soc. Nat. Hist.* 36: 171-382.  
AND G. THOMPSON 1914. Notes on Stockbridge trees. *Stockbridge* 1: 8-11.

- KNOWLTON, CLARENCE HINCKLEY 1919. An excursion to Mt. Washington, Massachusetts, and Bash-Bish Falls. *Rhodora* 21: 198-202.
- NILES, GRACE GRAYLOCK 1905. Hoosac Valley and its flowers and ferns. *Amer. Bot.* 9: 1-7, 21-28.
- SIMPSON, A. KENNETH 1948. With what the hills are clothed. pp. 31-74 in Roderick Peattie *The Berkshires, the purple hills*. Vanguard, N. Y.
- WALLACE, GEORGE JOHN 1939. Some recent additions to the flora of Berkshire County, Massachusetts. *Rhodora* 41: 128-130.
1942. More Berkshire plants. *Rhodora* 44: 332-334.
- WEATHERBY, CHARLES ALFRED 1947. Bartholomew's Cobble. *Amer. Fern Jour.* 37: 1-6.
- WHIPPLE, REV. A. B. 1892. The early botany of Berkshire. pp. 5-35. *Berkshire Historical and Scientific Society*.

#### BRISTOL COUNTY

- HERVEY, E. WILLIAMS 1911. Flora of New Bedford and the shores of Buzzards Bay with a procession of the flowers. Revised edition. 137 pp. E. Anthony & Sons, New Bedford.

#### DUKES COUNTY

- FOGG, JOHN MILTON, JR. 1930. Flora of the Elizabeth Islands, Massachusetts. *Rhodora* 32: 119-132, 147-161, 167-180, 208-221, 226-258, 263-281. Also as Cont. Gray Herb. of Harvard Univ. #41.
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#### HAMPDEN COUNTY

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#### NANTUCKET COUNTY

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NOTE ON *ELAEAGNUS COMMUTATA*. — The name *Elaeagnus commutata* appeared first in *Allg. Thüring. Gartenzeit.* 2: 95. 1843, without a description. Subsequently this name was validated by Mansfeld in Fedde's *Repertorium Specierum Novarum Regni Vegetabilis* 47: 280. 1939 with the description of P. A. Rydberg in his *Flora of the Prairies and Plains of North America* 563. 1932. Unfortunately, Mansfeld overlooked the earlier identical description of Rydberg in *Flora of the Rocky Mountains and Adjacent Plains* 582. 1918 [1917]. The correct citation, published in his *Flora of the Rocky Mountains and Adjacent Plains* 582. 1918 [1917], should read *Elaeagnus commutata* Bernhardi ex Rydberg. — BURDETTE L. WAGENKNECHT, ARNOLD ARBORETUM.

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